

Application No. 09/553,573  
Amendment dated January 19, 2007

### **REMARKS**

Applicant amended the title to delete the prefix "hemi." Applicant amended independent claims 1, 102, and 147 to further define Applicant's claimed invention. Support for the amendments to claims 1, 102, and 147 is found at least in FIG. 9 of the application.

In the Office Action of April 12, 2006 ("Office Action") preceding the September 27, 2006 Notice of Panel Decision, the Examiner rejected claims 102-106, 108-135, 137-147, 149-168, and 172 under 35 U.S.C. § 102(b) as being anticipated by US. Patent No. 5,888,227 to Cottle ("Cottle"). Independent claims 102 and 147 as now amended, each recite a spinal implant having a "leading end including a curved portion extending from a junction of said leading end and said exterior side wall to at least the intersection of said leading end and the mid-longitudinal axis of said implant." Cottle does not teach or suggest such structure.

Cottle teaches two embodiments of an implant. In the first embodiment of Figures 1-3, Cottle teaches "a semi-implant" with a leading end ("rear wall 15") and an exterior wall ("lateral face 13"). (See Cottle, col. 3, lines 56-60, col. 4, lines 61-62; FIGS. 1-3). FIG. 1 of Cottle shows that the portion of leading end (15) from the junction of the leading end and exterior side wall (13) to the intersection of the leading end and the mid-longitudinal axis of the implant is partly linear and not curved as recited in independent claims 102 and 147.

In the second embodiment of FIGS. 4-8, Cottle teaches an implant having "the same features as the embodiment of FIGS. 1-3." (Cottle, col. 4, lines 16-18, 63-66; FIGS. 4 and 8). FIGS. 4 and 8 illustrate that the portion of the leading end from the junction of the leading end and the exterior side wall to the intersection of the leading end and the mid-longitudinal axis of the implant is partly linear and not curved as recited in independent claims 102 and 147.

Applicant respectfully disagrees with the Examiner's statement that "referring to figure 5 and the teaching of Cottle that a spinal implant can be formed from two semi-implants (see column 4, lines 61 et seq.), it is within the scope of the reference and

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interpreted by one having ordinary skill in the art, that the implant of figure 5 could be divided backward into two semi-implants." (Office Action, page 2). Applicant submits that Cottle teaches that "the cage 1 can be formed either as a semi-implant, as shown in FIGS. 1-3, so that two implants must be inserted into the intervertebral space, or else it is also possible to form two semi-implants integrally, as shown in FIGS. 4-7." (Cottle, col. 4, lines 61-64). Cottle does not teach that the implant of FIGS. 4-7 could be "divided backward" into the semi-implant of FIGS. 1-3. Nonetheless, Applicant has amended independent claims 102 and 147 in order to expedite prosecution of this application.

Applicant submits that independent claims 102 and 147 as amended are novel over the disclosure of Cottle. Dependent claims 103-106, 108-135, 137-147, 149-168, and 172, dependent from independent claims 102 and 147, respectively, or claims dependent therefrom, are allowable at least due to their dependency from an allowable independent claim. The rejection of claims 102-106, 108-135, 137-147, 149-168, and 172 under 35 U.S.C. § 102(b) has been overcome.

The Examiner rejected claims 1, 2, 4-34, 36-42, and 101-174 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,113,638 to Williams et al. ("Williams") in view of U.S. Patent No. 5,192,327 to Brantigan ("Brantigan"). Neither Williams nor Brantigan, whether alone or in proper combination, teach or suggest an artificial interbody implant having a leading end including a curved portion extending from a junction of the leading end and the exterior wall to at least the intersection of the leading end and the mid-longitudinal axis of the implant as recited in independent claims 1, 102, and 147.

In Figs. 5A and 5B of Williams, the implant is shown with a trailing end having channels (107) and (109), a leading end opposite the trailing end, and an exterior side wall including channel (109). The portion of the implant's leading end extending from the junction of the leading end and the exterior sidewall to the intersection of the leading end and the mid-longitudinal axis of the implant is partly linear. Similarly, in the embodiment shown in Fig. 7A of Williams, the portion of the leading end from the

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junction of the leading end and the exterior sidewall to the intersection of the leading end and the mid-longitudinal axis of the implant is also partly linear. Williams does not teach or suggest an implant as recited in Applicant's independent claims 1, 102, and 147.

Applicant respectfully disagrees with the Examiner's statement that "the teaching of 'the implantable device according to the present invention' being a hemi-device applies to all embodiments taught by Williams et al. Referring to at least figure 5A, one skilled in the art would have fully understood that this device could have been built as a hemi-device." (Office Action, pages 2-3). Williams teaches two distinct embodiments of the implant. A hemi-implant embodiment is illustrated in Fig. 2 and full-size embodiments are illustrated in FIGS. 1 and 3A-8B. Williams does not teach that the implants shown in Figs. 5A and 7A can be deconstructed as proposed by the Examiner to form the hemi-implant of FIG. 2. Applicant maintains the position that modifying the embodiments of FIGS. 5A and 7A to be split into hemi-implants would interfere with the expansion mechanisms (e.g., 144 in FIG. 7A) for each embodiment and would render the implants inoperable for the intended purpose as taught in Williams. Nonetheless, Applicant has amended independent claims 1, 102, and 147 in order to expedite prosecution of this application.

Brantigan teaches a hemi-oval device 20 having "opposed side walls 21a, a rounded oval end wall 21b, a flat opposite end wall 21c and a central aperture 21d." (Brantigan, col. 4, lines 57-64; FIG. 2). FIG. 2 of Brantigan shows that the portion of the implant's leading end (flat end wall 21a) extending from the junction of the leading end and the exterior side wall (rounded end wall 21b) to intersection of the leading end and the mid-longitudinal axis of the implant is linear and not curved as recited in Applicant's claims 1, 102, and 147.

Applicant respectfully submits that the combination of Williams and Brantigan fails to teach or suggest Applicant's claimed invention as recited in independent claims 1, 102, and 147. Accordingly, the rejection of claims 1, 2, 4-34, 36-42, and

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101-174 under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Brantigan has been overcome.

The Examiner rejected claims 1, 2, 4-8, 11-34, 36-38, 40-42, and 101-174 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,609,635 to Michelson ("Michelson '635") in view of Brantigan.

In the Office Action, the Examiner asserts that "Michelson does not teach the implants 18-23 are hemi-devices as stated in column 10, lines 9-16, but only that they are sized to be placed next to each other." (Office Action, pages 3-4). Applicant respectfully maintains that the motivation used to support the combination of Michelson '635 with Brantigan is inapplicable because Michelson '635 already accomplishes without modification what the Examiner states is the reason to combine the teachings of Michelson '635 with Brantigan, *i.e.*, forming a spinal implant in two halves. Michelson '635 teaches that "implant 400 has a width W that is substantially less than the width of the implants 100-300 such that a series of such implants 400 are used as the interbody spinal implant, each placed closely adjacent to one another to approximate the size of the removed disc." (Michelson '635, col. 10, lines 9-13; and Fig. 18).

Applicant respectfully submits that a "series" of implants placed closely adjacent to each other by definition would indeed include two implants positioned side by side. Applicant respectfully points out that the claimed invention is not limited to hemi-implants or half implants. Independent claims 1, 102, and 147 state that "interior facing side wall" is "adapted to be oriented toward another implant when inserted within the disc space," and would thus include two side-by-side implants as described in Michelson '635. Accordingly, Applicant respectfully maintains that one skilled in the art would not look to another reference for a teaching on forming a spinal implant in two side by side implants when this feature is already taught by Michelson '635. Nonetheless, Applicant has amended independent claims 1, 102, and 147 in order to expedite prosecution of this application.

Neither Michelson '635 nor Brantigan, whether alone or in proper combination teach or suggest an implant with a leading end including a curved portion extending

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from a junction of the leading end and the exterior side wall to at least the intersection of the leading end and the mid-longitudinal axis of the implant as recited in independent claims 1, 102, and 147.

Michelson '635 teaches a spinal implant having a leading end ("insertion end 120") and an external side wall ("side wall 118"). (Michelson '635, col. 7, lines 1-5). Figs. 1 and 2 of Michelson '635 show that the portion of the implant's leading end (120) extending from the junction of sidewall (118) and the leading end to the intersection of the leading end and the mid-longitudinal axis of the implant is partly linear. The leading end (430) in the embodiment of Figs. 18 and 20 of Michelson '635 is also partly linear.

As discussed above, Fig. 2 of Brantigan shows that the portion of the implant's leading end (flat end wall 21a) extending from the junction of the leading end and the exterior side wall (rounded end wall 21b) to intersection of the leading end and the mid-longitudinal axis of the implant is linear and not curved as recited in Applicant's claims 1, 102, and 147.

Applicant respectfully submits that the combination of Michelson '635 and Brantigan fails to teach or suggest Applicant's claimed invention as recited in independent claims 1, 102, and 147. Accordingly, the rejection of claims 1, 2, 4-8, 11-34, 36-38, 40-42, and 101-174 under 35 U.S.C. § 103(a) as being unpatentable over Michelson '635 in view of Brantigan has been overcome.

Applicant submits that independent claims 1, 102, and 147 are patentable and that dependent claims 2-34, 36-42, 101, and 103-174 dependent from one of independent claims 1, 102, and 147, respectively, or claims dependent therefrom, are patentable at least due to their dependency from an allowable independent claim.

In view of the foregoing remarks, it is respectfully submitted that the claims, as amended, are patentable. Therefore, it is requested that the Examiner reconsider the outstanding rejections in view of the preceding comments. Issuance of a timely Notice of Allowance of the claims is earnestly solicited.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this reply, such extension is hereby respectfully requested. If there are any

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fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 50-3726.

Respectfully submitted,

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